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RubberWorld

The technical service magazine for the rubber industry Volume 202, No. 1 April 1990

Optical gauging and SPC
SPC considerations of Cp, Cpk
In search of the optimal compound
Rubber bearings for earthquake protection

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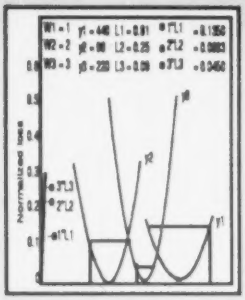

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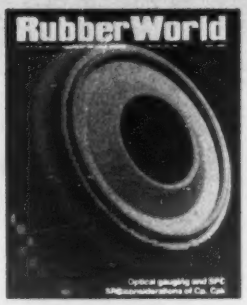

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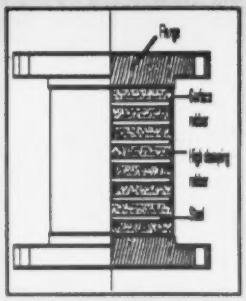

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The Audit Bureau

Editorial

A couple of surveys released during the recent Society of Automotive Engineers meeting have provided a little bit of a silver lining to the spate of gloom and doom stories associated with the auto industry in the U.S. But those stories just reflect the business performance of the domestic-owned auto companies and as many suppliers know, they aren't the only players in town.

"Plain talk on selling the transplants" conducted by Markey and Associates, and a Market Opinion Research survey of automotive design engineers point to the opportunities available to suppliers now and what to expect by the end of the decade. The Markey group surveyed engineers and component specifiers in Japanese automotive manufacturing plants in the U.S. Some of their findings show that 83% of the respondents cited SPC/Quality Control as the number one criteria for selecting a U.S. supplier; 55% listed research and development as the second most important; of the component specifiers, price ranked second among 64% of this group. The interesting results, however, are that 85% in the survey said they are currently seeking involvement of U.S. suppliers and that the participants expect to increase the number of U.S. supplied components by 46% in the next five years. The survey indicated that presently 28% of the suppliers for the transplant's projects-in-progress are domestic

The MOR study, done for Mobay Corp., also indicates more business for suppliers. This survey of automotive design engineers from both the manufacturing and supply sectors indicates that 70% think the number of partnerships between automotive companies and material suppliers will increase in the future while only 11% foresee a decrease. Other findings show that 89% of those surveyed say thermoplastics will increase; 18% saw an increase in rubber usage; 53% said silicones were considered the most likely material to make inroads in under-the-hood applications; 40% of all bumpers by the year 2000 will be comprised of RIM urethane, while 38% will be comprised of thermoplastics.

The business is out there. The materials and the customers might be changing, but it appears to be still growing. The elastomeric parts and material suppliers that exhibited at the SAE show seem to have grasped these realities and are positioning themselves to take advantage of the growth opportunities. If the domestic auto industry wants to self destruct the rubber industry doesn't have to follow along.

Don R. Smith
Editor

RubberWorld

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Business Briefs

Acquisitions, expansions

A definitive agreement has been reached between a management group in association with **Mitsubishi** to acquire **Aristech Chemical** for $27 per share in cash for all outstanding common shares. A cash tender offer will begin immediately, and is conditional based on the number of shares validly tendered, along with the number of shares being contributed by management, to total a majority of the outstanding shares. The agreement allows Aristech to continue to provide information to or solicit proposals from other potential bidders. **Huntsman Holdings** and **GE Plastics** told Aristech that they may be prepared to offer at least $27 per share unless materially negative information arises from due diligence. In the event the offer between the Mitsubishi/management group is not completed, Aristech will pay the group up to $13 million of actual, reasonable expenses incurred in connection with the transaction, according to the agreement. The management group will purchase approximately 12.5 percent of the common stock equity of a new holding company of which Aristech will be a subsidiary.

Custom dip and blow molder, **Steere Enterprises**, opened a 47,000 square foot manufacturing facility in Mogadore, Ohio designed to produce blow molded components and serve as a central warehouse for finished goods. All shipping and receiving functions will be handled from this location.

Morton International will acquire the specialty chemicals unit, which primarily produces adhesives, and the coatings group of **Whittaker Corp.** for about $225 million plus assumption of certain liabilities.

The **Fisons Instruments** division of **Fisons plc** in the United Kingdom purchased **VG Instruments**, a supplier of mass spectrometers and surface analysis instruments, for

RMA rubber report through November (figures in metric tons)

	YTD 1989	YTD 1988	% chg.
Total new rubber			
New rubber available	3,291,152	3,152,578	4.6
Imports	1,156,016	1,007,713	14.7
Exports	458,750	522,832	-12.3
Apparent consumption	2,799,178	2,648,476	5.9
Total natural rubber			
Imports	848,137	779,128	8.9
Exports	29,341	46,556	-37.0
Apparent consumption	836,625	783,048	6.8
Total synthetic rubber			
Production	2,135,136	2,144,865	-.2
Imports	307,879	228,585	34.7
Exports	429,409	476,276	-9.8
Apparent consumption	1,962,563	1,865,421	5.5
Total SBR			
Production	816,011	834,149	-1.5
Imports	102,279	82,866	23.4
Exports	160,271	175,100	-8.5
Apparent consumption	741,680	720,997	3.7
Total nitrile			
Production	64,282	69,422	-7.4
Imports	15,095	15,103	-.1
Exports	17,274	13,929	24.0
Apparent consumption	60,890	68,400	-11.0
Polybutadiene			
Production	380,944	373,103	2.2
Imports	62,225	70,170	-11.3
Exports	75,804	60,672	24.9
Apparent consumption	348,048	373,719	-6.8
Ethylene-propylene			
Production	242,291	243,341	-.4
Imports	31,345	12,778	145.3
Exports	50,129	45,574	10.0
Apparent consumption	211,045	210,966	.0
Butyl, polychloroprene, polyisoprene, silicone and other synthetic elastomers			
Production	631,608	624,850	1.1
Imports	96,935	47,668	103.4
Exports	125,931	181,001	-30.4
Apparent consumption	600,899	491,339	22.3

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Business Briefs

Arco will implement a CFC phase-out program by the end of 1990, aiming for the elimination of the use of blowing agents in automotive seating, bumper systems and headliners. Presently, modifications are in place to enable the production of higher density Arpro expanded polypropylene foams without the use of CFCs, and implementation should be completed by the end of June.

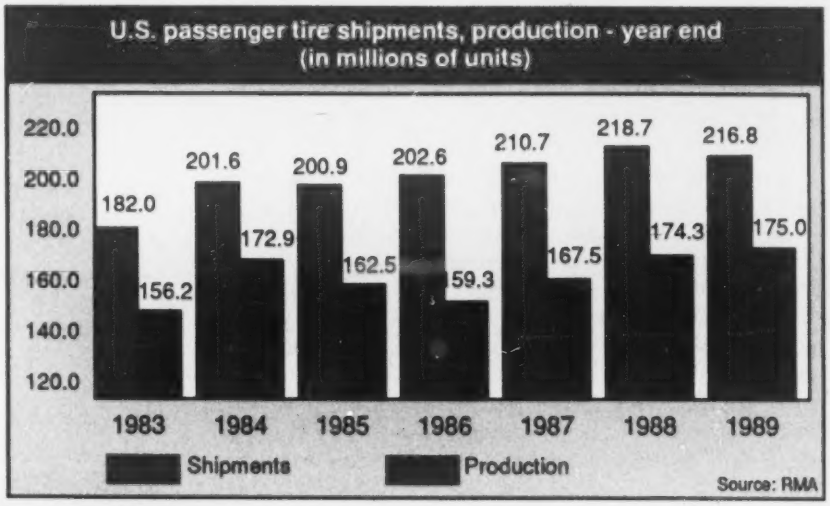
Arco Chemical reported 1989 net income of $405 million on revenues of $2.7 billion.

Bridgestone/Firestone enacted price adjustments ranging from -1.5 percent to 5.0 percent on Bridgestone brand tires sold in the U.S. Specifically, Bridgestone's S402, 212V and 207V lines increased 3.0 percent; commercial light truck tires increased 5.0 percent; in-line adjustments were made to the prices of truck and bus tires; and net actual price adjustments from -1.5 percent to 2.0 percent were made on the company's off-the-road pricing structure, depending on the line.

Cabot reported 1989 net income of $14.2 million from net sales and other operating revenues of $1.9 billion.

Cooper Tire & Rubber reported net income for 1989 was $58.2 million and net sales were $866.8 million.

Davis-Standard announced sales in 1989 of $74.8 million.



DUSTLESS FLAKES...

Chlorez 700-DF Chlorinated Paraffin — new from Dover

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ments showed the largest increase, 32.8 percent for the year.

Shipments of truck and bus tires climbed 2.5%, from 46.0 million units in 1988 to 47.1 million units in 1989. Truck and bus tire production increased by 2.3%, from 37.0 million units to 37.8 million units. Original equipment shipments dropped 7.1% over 1988, and replacement tire shipments rose 4.5%.

Rubber-based, single-ply roofing systems are predicted to account for as much as 90 percent of new growth in the overall domestic non-residential roofing activity in 1990, according to the **Rubber Manufacturers Association's Roofing Products Division** forecast. Overall, domestic non-residential roofing activity is expected to be relatively flat in 1990 and 1991, with growth projected at 2 percent. Total U.S. non-residential roofing is expected to grow from three billion square feet in 1990 to 3.060 billion in 1991. Rubber-based single-plies are projected to climb from 1.095 billion square feet in 1990 to 1.150 billion in 1991.

Of the 60 million square feet of total non-residential roofing growth projected between 1990 and 1991, rubber-based single-plies will account for 55 million square feet, or more than 90 percent, according to the forecast. RMA also predicts that total single-ply roofing construction will grow from 1.895 billion square feet in 1990 to 1.99 billion in 1991, rising from 63 percent of the total non-residential roofing market to 65 percent by the end of 1991. By then rubber-based single-ply will command 58 percent of all single-ply construction, and 38 percent of total non-residential roofing, according to RMA.

An environmental excise tax, part of two new sections of tax code contained in the Revenue Reconciliation Act of 1989, requires U.S. manufacturers who use ozone-depleting chemicals to pay quarterly payments beginning in April on all chlorofluorocarbons (CFCs) used since January 1, 1990. CFCs are used in the manufacture of air conditioners and automotive seating, among other uses. Manufacturers will pay varying amounts depending on the type of CFC used. They will pay an excise tax of $1.37 per pound of CFC used in 1990. The tax increases to $1.67 per pound in 1992 and $2.65 per pound in 1993.

The U.S. adhesives and sealants industry registered sales in 1989 valued at $8.7 billion and shipped 12.4 billion pounds, an increase of 8 percent over 1988 dollar figures. However, industry growth is expected to slow from the 9 percent growth rate during the last decade to about 7 percent a year, due to continued moderate construction, and sluggish production of vehicles and other durable goods, according to Rauch Associates, a marketing consulting and industry information firm based in Bridgewater, NJ.

In 1994, total adhesives and sealants consumption will increase to $12 billion, according to Rauch.

Current adhesives sales are estimated at $6.915 billion and 10.5 billion dry pounds. They are comprised of merchant sales of mainly formulated products that account for 74 percent of adhesive consumption, but only 50 percent of total adhesives volume.

The balance is in captive production by users of larger quantities that have generally less critical applications. Binders for primary wood bonding, carpet backing and foundry uses include synthetic and natural lattices that account for 15 percent of adhesives sales but over 40 percent of their volume.

Sealant sales are estimated at $1.785 billion and 1.9 billion dry pounds. Besides traditional uses, Rauch includes PU appliance wall foam interface sealants, plastisols, autobody fillers, pavement joint fillers and grouts and putties.

RMA tire report - December
(figures in thousands of units)

Passenger tires	YTD '89	YTD '88	% change
Shipments			
original equipment	51,170	54,131	-5.5
radial	44,654	46,260	-3.5
replacement	153,281	155,294	-1.3
radial	146,157	145,579	0.4
export	12,437	9,365	32.8
radial	11,617	8,383	38.6
total	216,888	218,790	-0.9
radial	202,428	200,222	1.1
Production	175,026	174,341	0.4
radial	164,249	159,202	3.2
Truck & bus tires			
Shipments			
original equipment	8,177	8,801	-7.1
radial	6,833	6,639	2.9
replacement	35,436	33,918	4.5
radial	21,369	20,207	5.8
export	3,548	3,301	7.5
radial	2,645	2,550	3.7
total	47,161	46,021	2.5
radial	30,847	29,397	4.9
Production	37,844	37,010	2.3
radial	25,544	23,055	10.8

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